

1/2 020 UNCLASSIFIED PROCESSING DATE--13NOV70
TITLE--THE STATE OF THE LIVER IN ACUTE CHOLECYSTOPANCREATITIS -U-
AUTHOR--(02)-SHABANOV, A.N., TITOV, R.I.
COUNTRY OF INFO--USSR
SOURCE--KLINICHESKAYA MEDITSINA, 1970, VOL 48, NR 4, PP 75-79
DATE PUBLISHED-----70

SUBJECT AREAS--BIOLOGICAL AND MEDICAL SCIENCES

TOPIC TAGS--GALL BLADDER, LIVER FUNCTION, PANCREAS, PROTEIN, PROTHROMBIN,
LIPID METABOLISM, ALBUMIN, GLOBULIN, BILE

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED
PROXY REFL/FRAME--3005/0077

STEP NO--UR/0497/70/048/004/0075/0079

CIRC ACCESSION NO--AP0132370

UNCLASSIFIED

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UNCLASSIFIED

PROCESSING DATE--13NOV70

CIRC ACCESSION NO--AP0132370

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. IN 202 PATIENTS WITH ACUTE CHOLECYSTOPANCREATITIS THE AUTHORS STUDIED THE PROTEIN FORMING, PROTHROMBIN FORMING, PIGMENTARY FUNCTIONS OF THE LIVER AND PARTICIPATION OF THE LIVER IN FAT METABOLISM. FOR THIS PURPOSE THE FOLLOWING INVESTIGATIONS WERE CARRIED OUT: TOTAL BLOOD SERUM PROTEIN, QUANTITY OF ALBUMINS AND GLOBULINS, MERCURIC CHLORIDE, THYMOL AND FORMOL REACTIONS, BLOOD CHOLESTEROL AND BILIRUBIN, RUBILIN AND BILIARY PIGMENTS IN THE URINE. IN ONE THIRD OF PATIENTS WITH ACUTE CHOLECYSTOPANCREATITIS FUNCTIONAL DISTURBANCES OF THE LIVER WERE REVEALED. DIFFUSE AFFECTION OF THE PEPATIC PARENCHYMA CORRESPONDED MAINLY WITH THE DEGREE OF ANATOMICAL CHANGES IN THE PANCREAS. IN NECROTIC PANCREATITIS THE LIVER FUNCTIONS SUFFERED MORE SHARPLY, THIS CAUSING THE HAZARD OF DEVELOPMENT OF HEPATIC INSUFFICIENCY. FACILITY: KAFEDRA KHIRURGII I TRAVMATOLOGII SANITARNO-GIGIYENICHESKOGO FAKULTETA I MOSKOVSKOGO MEDITSINSKOGO INST. IM. I. M. SECHENOVA.

UNCLASSIFIED

1/2 018 UNCLASSIFIED PROCESSING DATE--16OCT70
TITLE--LATE RESULTS OF RADICAL OPERATIONS IN CANCER OF THE LARGE DUODENAL
PAPILLA -U-

AUTHOR-(03)-SHABANOV, A.N., MIKIRTUMOV, S.M., DNITRIYEV, A.YE.

COUNTRY OF INFO--USSR

SOURCE--VESTNIK KHIRURGII IMENI I. I. GREKOVA, 1970, VOL 104, NR 4, PP
71-74

DATE PUBLISHED-----70

SUBJECT AREAS--BIOLOGICAL AND MEDICAL SCIENCES

TOPIC TAGS--CANCER, DUODENUM, SURGERY

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED

PROXY REEL/FRAME--1988/0039

STEP NO--UR/0589/70/104/004/0071/0074

CIRC ACCESSION NO--AP0105138

UNCLASSIFIED

2/2 018

UNCLASSIFIED

PROCESSING DATE--16OCT70

CIRC ACCESSION NO--AP0105138

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. IN THE PAPER BASING ON THE STUDY OF THE CLINIC AND COURSE OF 39 PATIENTS OPERATED UPON FOR TUMOR OF THE MAJOR PAPILLA DUODENI, INCLUDING 21 PATIENTS TREATED RADICALLY WITH SUBSEQUENT ANALYSIS OF THEIR LATE RESULTS, IT IS CONCLUDED THAT IN LIMITED TUMORS OF THE DUODENAL PAPILLA NOT PENETRATING IN THE PANCREATIC HEAD TRANSDUODENAL PAPILLECTOMY IS INDICATED, THAT IS IN AGREEMENT WITH NEW CONCEPTIONS OF SURGICAL TECHNIC IN REMOVING MALIGNANT TUMORS (A. I. RAKOV) DEFINING THE IDEA OF ANATOMICAL ZONES AND SHEATH LOCALIZATION OF TUMOR. ACCORDING TO THE AUTHORS' DATA TRANSDUODENAL PAPILLECTOMY IS EFFECTIVE ENOUGH FROM THE POINT OF VIEW OF IMMEDIATE AND LATE RESULTS. AN AVERAGE SURVIVAL RATE AFTER THE OPERATION WAS 3 YEARS. MAXIMUM TERMS OF OBSERVATION WERE 8 YEARS. AT PRESENT THIS PATIENT, AGED 63 YEARS OLD, IS STILL ENGAGED IN WORK AND FEELING WELL. IT IS FELT THAT EXTENSIVE PANCREATODUODENAL RESECTION INHERENT IN A GREAT RISK FOR PATIENTS' LIFE SHOULD BE INDICATED ONLY IN TUMORS OF THE DUODENAL PAPILLA INVADING THE PANCREATIC HEAD. AN AVERAGE SURVIVAL RATE AFTER PANCREATODUODENAL RESECTION WAS 1 YEAR AND 10 MONTHS.

UNCLASSIFIED

AA0040756

SHABANOV AN UR 0482

Soviet Inventions Illustrated, Section I Chemical, Derwent, 3/70

234624 MOULD LUBRICATOR FOR CONTINUOUS CASTING

PLANTS uses feed channels which issue above the collector so as to ensure even distribution of lubricant round the mould perimeter, Lubricant is pumped etc. from tank 1 to the frame 2 on the mould 3 and via a feedline 4 with choke 5. It thus reaches the collector 7 and as this fills so the lubricant fills all the channels 8. When there is excess lubricant pressure in the collector, the lubricant is fed in identical portions into all these channels and thus flows out at the mould perimeter in identical portions. 7.10.65. as 1031428/22-2. EVTEEV D.P et al. Metallurgical Plant Design Inst. (26.6.69.) Bul.4/10.1.69. Class 31c. Int.Cl. B22d.

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AA0040756

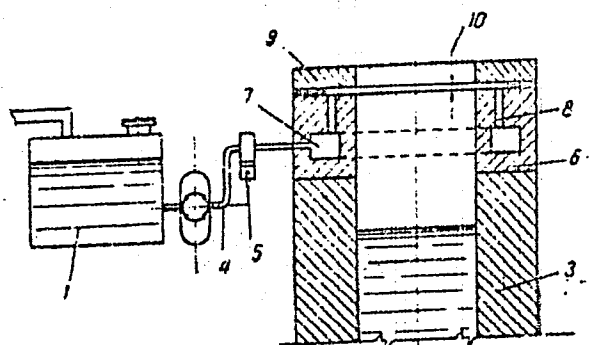


Fig. 1

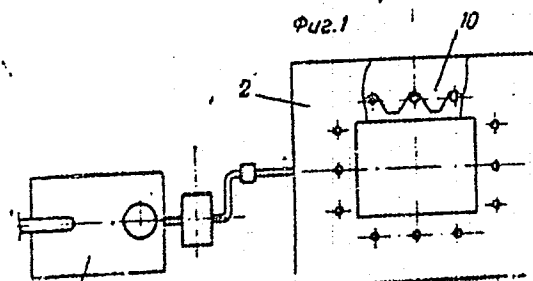


Fig. 2

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AA0040756

AUTHORS: Yevteyev, D. P.; Zhidovinova, M. M.; Karpeka, V. A.;
Kaushanskiy, A. S.; Krulevetskiy, S. A.; Pravdin, V. S.;
Satanovskiy, Ya. Ye.; Ful'makht, V. V.; Shabanov, A. N.

Gosudarstvennyy Soyuznyy Institut po Proyektirovaniyu
Merallurgicheskikh Zavodov

19750441

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SHABANOV, M. Ye.

SO:IPRS 54153
29 SEP 71

UDC: 617.735-007.17-085.31:547.963.32

THE SPECIFIC THERAPEUTIC EFFECT OF RIBONUCLEOTIDES IN TAPETORETINAL DYSTROPHY
Article by B.B. FUKS, S.F. SHERZHAVSKAYA, F.G. LOVINA, M.Ye. SHABANOV, Insti-
tute of Human Genetics, USSR Academy of Medical Sciences, Moscow, and Novos-
ibirsk Institute for the Advanced Training of Physicians, Moscow, Lermontov
Meditsinskaya Street 5552, Krasnodar, No 7, 1971, pp 6566]

In spite of the fact that numerous morphological and topochemical investigations have been made in the last few years pertaining to the state of the retina in tapetoretinal dystrophies, the pathogenesis of this group of diseases remained quite unclear, and there was no rational etiopathogenetic therapy.

Yet we are dealing primarily with hereditary disease resulting in poorer vision and blindness of children and young people.

It has been repeatedly proven experimentally that there is a correlation between RNA synthesis, RNA and nucleotide content, and the functional load on the photoreceptor cells of the retina. Regeneration of rhodopsin-containing disks is related to the level of protein synthesis in the rod (Young, 1967). Animals with hereditary retinitis pigmentosa diminished activity of many enzymes (the Pentose route is particularly affected) and diminished synthesis of protein in photoreceptor cells (Reading and Sornby, 1964).

In model studies of the rabbit's retina following moniodoacetate poisoning (S.F. Sherzhavskaya and Ye.G. Lovina, 1966, 1969) it was demonstrated cytochemically that there is a marked drop in cytoplasmic RNA content in the retinal ganglion cells.

We made the assumption that in the presence of hereditary dystrophy in man, the protein synthesizing system of retinal cells is affected as a whole as a result of impaired synthesis of ribonucleotides. This served as the basis for clinical administration of ribonucleotide preparations.

Investigation of RNA and ribonucleotide preparations. Originally, we used preparations of yeast RNA which were prescribed per os in a dosage of up to 2 grams per day for 4-5 weeks. The RNA preparations contained

USSR

UDC 532.516

BASHKATOV, M. V., SHABANOV, S. I., Novosibirsk

"Flow around a Sphere with a Transverse Stream of Matter with Low Reynolds Numbers"

Moscow, Zhurnal Prikladnoy mekhaniki i tekhnicheskoy fiziki, No 3, 1972, pp 103-109

Abstract: The analytical method of asymptotic expansions of Pearson and Proudman ["Expansions at Small Reynolds Numbers for a Flow Past a Sphere and a Circular Cylinder," J. Fluid Mech., Vol 2, Part 3, 237-262, 1957] was used to solve the problem (at least in the second approximation) of flow past a sphere with uniform blasts at $R < 1$ with transverse flow of matter and a blast velocity less than the velocity of the oncoming flow. For more precise solution of the corresponding thermal problem, the analogous method proposed by A. Acrivos and T. D. Taylor ["Heat and Mass Transfer from Single Spheres in Stokes Flow," Phys. Fluids, Vol 5, No 4, 1962] was used. Expressions were obtained for the distribution of the current function and the velocity component and also for the drag coefficient of the sphere. The blast decreases the drag of the sphere. The effect of the blast increases as the Reynolds number increases.

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USSR

UDC 621.372.2

SHABANOV, V. M., Academy of Sciences of the USSR in Moscow

"The Formation of Electromagnetic Shock Waves in a Varicap with Distributed Parameters"

Moscow, Radiotekhnika i Elektronika, Vol. 15, No. 4, April 1970, pp. 869-871

Abstract: A varicap with distributed parameters is a transmission line with nonlinear longitudinal capacitance and low dispersion in the high frequency regions. Thanks to the boundary conditions at the shock discontinuity, the formation of shock waves in a distributed varicap can be traced using telegraph equations and the quasistatic equation of communication.

Partial solutions to these equations are "simple waves". These describe the process of shock wave propagation in terms of the velocity of the discontinuity, the currents and voltages involved, the longitudinal inductants and the longitudinal charge in the varicap and the characteristics of distribution of the impurities at the p-n-junction. Theoretically, these simple waves are complicated by partial reflection from the discontinuity, seriously complicating the analysis; however, in practice the simple wave is a satisfactory boundary condition for the discontinuity; in fact, the discrepancies are considerably less than 1%. This permits the use of methods adapted from gas dynamics.

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USSR

SHABANOV, V. N., Radiotekhnika i Elektronika, Vol. 15, No. 4, April 1970, pp. 869-871

The authors illustrate their procedure by finding the coordinate of a discontinuity at the moment of its coincidence with the pulse front, assuming that the voltage at the beginning of the shock wave is equal to zero; for a relatively smooth pulse front, they are able to show that the coordinate of the discontinuity is relatively independent of the terminal voltage.

The method was verified experimentally on 2 varicaps. The results showed that low frequency losses in the line were insignificant, that the pulse rise duration decreases linearly in the initial portions of the varicap, while the pulse duration does not change, and that the rate of decrease coincides with that for a simple wave. When the discontinuity coincides with the wave front a stationary wave is established. In one of their sample, they demonstrated that this occurred whenever an initial pulse shorter than 6 nanoseconds was applied, regardless of its amplitude. In general, there was good agreement between the theoretical and experimental values.

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USSR

MAYSTROVSKAYA, L. M., OL'KHOVSKIY, Yu. G., SHABANOV-KUSHINARENKO, Yu. P.

"Certain Binary Relationships"

Probl. Bioniki. Resp. Mezhd. Temat. Nauch.-Tekhn. Sb. [Problems of Bionics. Republic Interdepartmental Thematic Scientific and Technical Collection], 1972, No 9, pp 37-40 (Translated from Referativnyy Zhurnal Kibernetika, No 4, 1973, Abstract No 47730, by the authors).

Translation: The possibility is studied of describing the human receptors using dependences such as $z = L(\phi_1(x), \phi_2(y))$, where z is the binary response of a test subject; x, y are input signals; ϕ_1, ϕ_2 are functions taking on values in a certain set G ; L is a characteristic function of the diagonals of square $G \times G$.

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USSR

SHABANOV-KUSHNARENKO, YU. P., SHUL'GIN, I. V. and LOPATCHENKO, B. K.

"Introduction of Metrics in a Field of Vision"

Probl. Bioniki. Resp. Mezhd. Temat. Nauch.-Tekhn. Sb. [Problems of Bionics. Republic Interdepartmental Thematic Scientific and Technical Collection], 1973, No 10, pp 58-66 (Translated from Referativnyy Zhurnal Kibernetika, No 10, 1973, Abstract No 10V785)

Translation: The regularities of conversion of a physical space into a subjective field of vision with monocular perception are mathematically described. The introduction of a linear normalized space to the field by an axiomatic method allowed proof of the existence of mapping ϕ , converting the initial form of the field of vision to a normal form and providing Euclidean metrics within it. Diagrams characterizing the form of transform ϕ^{-1} are produced.

Author's view

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USSR

UDC: 8.74

SHABANOV-KUSHNARENKO, Yu. P., SHUL'GIN, I. V., PUTYATIN, Ye. P., LOPAT-CHENKO, B. K.

"Mathematical Modeling of Human Classification of Certain Classes of Visual Patterns"

V sb. Upr. i inform. protsessy v zhivoy prirode (Control and Information Processes in Animate Nature--collection of works), Moscow, "Nauka", 1971, pp 106-111 (from RZh-Kibernetika, No 4, Apr 72, Abstract No 4V596)

Translation: The authors consider the following problem of interpretation of formulas which describe conversion of input signals to output signals in the organ of vision. Let there be a certain signal converter in the form of block 1. Signals x_1, x_2, \dots may be sent to the input of block 1. Signals y_1, y_2, \dots correspondingly appear at the output of block 1 in response to these signals. All possible signals x_1, x_2, \dots to which block 1 reacts form some set X . All possible responses of the converter form the set Y . The operator F puts the elements y of set Y into correspondence with the elements x of set X . This correspondence may be expressed by the

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USSR

UDC: 8.74

SHABANOV-KUSHNARENKO, Yu. P., YAKIMENKO, L. I.

"Mathematical Model of Definition of Classes of Identical Words"

Probl. bioniki. Resp. mezhved. temat. nauch.-tekhn. sb. (Problems of Bionics. Republic Interdepartmental Thematic Scientific and Technical Collection), 1971, vyp. 7, pp 103-105 (from RZh-Kibernetika, No 4, Apr 72, Abstract No 4V583)

Translation: A programmed mathematical model of search for classes of identical words is constructed and realized on the "Ural-4" computer on the basis of the set of Russian nouns. The functional scheme of the model is presented in ALGOL-60 algorithmic language supplemented by certain logic operations on words for the description. Authors' abstract.

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USSR

UDC: 8.74

SHABANOV-KUSHNARENKO, Yu. P., YEREMIN, G. S., USENKO, S. A.

"Linear Mathematical Model of the Conversion of Complex Acoustic Signals to Loudness"

Probl. bioniki. Resp. mezhved. temat. nauch.-tekhn. sb. (Problems of Bionics. Republic Interdepartmental Thematic Scientific and Technical Collection), 1971, vyp. 7, pp 68-74 (from RZh-Kibernetika, No 4, Apr 72, Abstract No 4V599)

Translation: Problems of modeling loudness conversions in the human auditory analyzer are considered. A linear mathematical model is proposed for a set of acoustic signals whose amplitude-frequency spectrum consists of a finite number of harmonic components. The band in the range of sounds audible to man where the axioms are satisfied is experimentally determined. Authors' abstract.

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USSR

UDC: 8.74

SHABANOV-KUSHNARENKO, Yu. P., YERYOMIN, G. S., KACHKO, Ye. G., MARCHENKO, Yu. S., PCHELINOV, V. P., TISHCHENKO, V. V.

"On the Problem of Axiomatic Construction of Mathematical Models"

Probl. bioniki. Resp. mezhved. temat. nauch.-tekhn. sb. (Problems of Bionics. Republic Interdepartmental Thematic Scientific and Technical Collection), 1971, vyp. 6, pp 70-74 (from RZh-Kibernetika, No 1, Jan 72, Abstract No 1V1074)

Translation: Mathematical methods are proposed for describing objects which have known input and output signals. Authors' abstract.

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30 Oct 70

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112. USSR

V. KUSHNARENKO, V. P.

"Particulars on the Control of Social Systems"

Kiev, Filosophiya Duma, No 3, May-Jun 1970, pp 20-29

Translation of author's abstract: Social control is the process of deliberate influence of the subject of control on human components and the interrelationship of the controlled system. The control of complex social formations as a variety of organized activity represents in itself one of the specialized functions in the social division of labor which by its nature includes the forecasting of the possible trends of development and methods of activity of the appropriate system or its constituent components, acceptance of solutions (selection of one of the forecasting possibilities), and the organization of the efforts of all the members of a system for transforming this solution into reality.

A specific moment of social control is forced by authority. In a broad, general sociological sense, the concept of "authority" signifies the consciousness of the mode of action, and, in an extreme case, the fate of the subordinate person for group acquire such structural particulars as attainability, hierarchy capacity, etc.

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So: Foreign Press Digest

30 Oct 70

113. USSR

Mathematics

SHABANOV-KUSHNARENKO, Yu. P., Mathematics, V. A.

UDC: 5115.001.57:512.9

Kiev, 1969

"Search Algorithms for Object Pairs by Incomplete Set of Characteristics"

Ukr. Mat. Zh. 1969, No 1 (Problems of the Theory of Electronic Digital

Mathematical Machines, Series of a Seminar, No 1 - Collection of Works, Kiev, 1969, pp 3-5) [Translation from *Mat. Kibernetika*, No 5, 1970, Abstract No 5122]

Translation: This work is dedicated to an exposition of the rules for information processing in a verbal memory system, reduced to a problem of heuristic modeling of the verbal behavior of man. The authors believe that verbal behavior can be represented in the form of a solution of a finite problem or range of problems according to convergent lines; the human verbal memory system has a hierarchical structure; the first level of memory is a tree-like structure. The authors suggest a classification for information problems solved using only the first level of memory. The classification was composed using exercises from a Russian language textbook for the second grade. An algorithm for solution of several of these problems is described. The algorithm is described in an associative programming language based on ALGOL and

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Mathematics

USSR

UDC 51:155.001.57:612.82

SHABANOV-KUSHNARENKO, Yu. P., KACHKO, Ye. G.

~~"Algorithm Upon Which Inertia and Irradiation of Human Vision are Based"~~

Kibernet. i Vychisl. Tekhn. Resp. Mezhved. Sb. [Cybernetics and Computer Engineering, Republic Interdepartmental Collection], No 4, 1970, pp 195-201, (Translated from Referativnyy Zhurnal, Kibernetika, No 6, 1971, Abstract No 6 V676 by the authors).

Translation: A psychophysical model of human vision is studied, having properties corresponding to inertia and irradiation.

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USSR

UDC 51:155.01.57:612.82

SHABANOV-KUSHNARENKO, Yu. P., KACHKO, Ye. G.

"Study of the Reactions of an Allard-Luisoff Model of Inertia to Periodic, Bright Flashes"

Probl. Bioniki. Resp. Mezhd. Nauchno-tekhn. Sb. [Problems of Bionics, Republic Interdepartmental Scientific and Technical Collection], No 4, 1970, pp 103-114, (Translated from Referativnyy Zhurnal, Kibernetika, No 6, 1971, Abstract No 6 V674 by the authors).

Translation: Problems of possible application of the mathematical model of Allard and Luisoff for description of the perception of periodic bright flashes are studied.

USSR

UDC 51:155.01.57:612.82

SHABANOV-KUSHNARENKO, Yu. P.

"Axiomatic Construction of a Model of Color Vision"

Probl. Bioniki. Resp. Mezhd. Nauchno-tekhn. Sb. [Problems of Bionics, Republic
Interdepartmental Scientific and Technical Collection], No 4, 1970, pp 30-50,
(Translated from Referativnyy Zhurnal, Kibernetika, No 6, 1971, Abstract No
6 V673 by the author).

Translation: The problem of mathematical modeling of stable and homogeneous
visual processes is presented.

USSR

UDC: 621.373.521.13.001

GAVRA, T. D., SHABANOV, Yu. V., Active Members of the Scientific and Technical Society of Radio Engineering, Electronics and Communications imeni A. S. Popov

"A Transistorized Quartz-Crystal VHF Oscillator With High Mode Frequency Stability"

Moscow, Radiotekhnika, Vol 26, No 6, Jun 71, pp 62-67

Abstract: The authors investigate the possibility of improving the mode frequency stability of VHF oscillators. An optimum circuit for 100 MHz with transistor in a common-base hook-up and quartz crystal in the feedback circuit was studied. Methods of measuring the mode frequency stability are presented, and the effect of circuit elements and supply conditions on frequency stability is discussed. The experimental studies showed that substitution of elements of the same type for the active and passive elements in VHF quartz-crystal oscillators does not change the operating conditions. Comparatively low-frequency transistors can be used for self-compensating operation, which requires special selection of the operating point. A mode frequency stability of about $2 \cdot 10^{-7}$ can be achieved by using rf transistors in the simplest crystal-controlled harmonic oscillator circuits. Amplifier circuits and automatic amplitude control systems have no adverse effects on the mode frequency stability of the oscillator. The mode frequency stability of the oscillator can be improved to $(1-2) \cdot 10^{-8}$ by using simple compensation circuits.

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AA0040631

SHABANOVA

DAUR 0482

3-76

Soviet Inventions Illustrated, Section I Chemical, Derwent,

233657 MERCURATED POLYSTYRENE CATALYST used in preparation of polymerisable vinyl carboxylates ensures less toxicity of the process improved catalyst life and economy of production and also renders the process continuous. The catalyst is prepared by soaking 15.6g of polystyrene in 174.6g of nitrobenzene overnight at room temp. A further 40g. of nitrobenzene are then added and the mixt. heated to 120°C for 1-2hrs followed by the addition of 52.5g mercuric acetate and 9 ml. acetic acid. The mixture is heated for a further 6-7 hrs. at 120°C with stirring. The product is washed with methylated spirit and acetone and dried at 60°C. The catalyst is used in amount of 5% wt. of the fatty or aromatic acid used. 29.7.67. as 1175988/23-4, DAVANKOV, A.B. et al. In. G. Mamedaliev Petrochemical Inst. Sumgait Filial. (30.6.69) Bul. 3/24.12.68. Class 12o, 21, 12o, 12. Int. Cl. C 07c. C 67c.

19750191

AA0040631

AUTHORS: Davankov, A. B.; Renard, T. L.; Pishnamazzade, B.-A. F.;
Shabanova, D. A.; and Kotlyarevskaya, V. N.

Sungaytskiy Filial Instituta Neftekhimicheskikh Protsessov
imeni Yu. G. Mamedaliyeva

19750192

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UDC 541.69.661.718.1

USER

MASTRYUKOVA, T. A., SHIPOV, A. E., GORBENKO, E. B., KABACHNIK, M. I., KACAN, YU. S., YERSHOVA, YE. A., ~~SHABANOVA, M. P.~~, and SAVCHENKO, K. N., Institute of Heteroorganic Compounds, Academy of Sciences USSR

"A New Type of Selective Organophosphorus Insecticides and Acaricides. 2. Methyldithiophosphonic Acid Derivatives"

Moscow, Izvestiya Akademii Nauk SSSR, Seriya Khimicheskaya, No 9, Sep 71, pp 2003-2005

Abstract: In an earlier article the authors examined a new type of selective insecticides and acaricides, viz. derivatives of mono- and dithiophosphoric acids containing amino acid residues, their esters and methylanides. The present article deals with an analogous series of methyl dithiophosphonates, obtained by the reaction of the corresponding chloroacetyl derivatives of amino acids or their esters with ammonium O-ethyl methyldithiophosphonate. It was found that compounds of this series are more toxic for arthropods and warm-blooded animals than the corresponding dithiophosphates. Substances containing a free carboxyl group are the least toxic. A study of the insecticidal and acaricidal activity of the resultant compounds shows that they are more characterized by acaricidal activity and that they are more

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JSNR

MASTRYUKOVA, T. A., et al., Izvestiya Akademii Nauk SSSR, Seriya Khimicheskaya, No 9, Sep 71, pp 2003-2005

active insecticides and acaricides than the corresponding phosphates, but the selectivity of their effect on arthropods is weaker than in the case of dithiophosphates. A comparison of the effect of these two groups on arthropods and warm-blooded animals shows greater selectivity in the case of methyl dithiophosphonates.

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1/2 025 UNCLASSIFIED PROCESSING DATE--18SEP70
TITLE--UPPER LIMIT OF THE HOMOGENEITY REGION OF (Ti, Mo) AND C SUB1 MINUS
X SOLID SOLUTIONS -U-
AUTHOR--(03)-YEREMENKO, V.N., VELIKANOVA, T.YA., SHABANOVA, S.V.
COUNTRY OF INFO--USSR
SOURCE--IZV. AKAD. NAUK SSSR, NEORG. MATER. 1970, 6(1) 6-10
DATE PUBLISHED-----70
SUBJECT AREAS--MATERIALS
TOPIC TAGS--SOLID SOLUTION, MOLYBDENUM COMPOUND, TITANIUM COMPOUND,
CARBIDE, GRAPHITE
CONTROL MARKING--NO RESTRICTIONS
DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRA--1984/0149 STEP NO--UR/0363/70/006/001/0006/0010
CIRC ACCESSION NO--AP0054945
UNCLASSIFIED

2/2 025

UNCLASSIFIED

PROCESSING DATE--18SEP70

CIRC ACCESSION NO--AP0054945

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. THE UPPER LIMIT OF THE HOMOGENEITY REGION OF (TI, MO) C SUB1 MINUS X SOLID SOLNS. IN THE MO,TI,C SYSTEM WAS DETD. ALLOYS WERE INVESTIGATED, THE COMPNS. OF WHICH FALL INTO THE COEXISTENCE REGION OF GRAPHITE AND THE CARBIDE PHASES AND IN THE MO-C SUB0.SUB64 MINUS TIC SECTION OF THE PHASE DIAGRAM. THE ALLOYS TO BE STUDIED WERE PREPD. BY ARC MELTING IN A PROTECTIVE AR ATM. AND WERE ANNEALED IN VACUO IN GRAPHITE CONTAINERS. THE INITIAL MATERIALS WERE 99.7PERCENT MO POWDER, TIC (CONTG. 18.7PERCENT COMBINED C AND 0.4PERCENT FREE C), AND SPECTRALLY PURE GRAPHITE. X RAY PHASE, MICROSCOPIC, AND CHEM. ANAL. METHODS WERE USED. THE PHASE COMPN. OF THE ALLOYS AT THE SURFACE OF THE SOLY. OF C IN CARBIDE PHASES OF THE MO,TI,C SYSTEM WAS INVESTIGATED. BY EXTRAPOLATING THE CONC. DEPENDENCE OF THE LATTICE PARAMETERS OF THE CUBIC SOLID SOLNS. (TI,MO) C SUB1 MINUSX TO 0PERCENT TI, THE VALUE FOR THE LATTICE PARAMETERS OF THE CUBIC ALPHA-MINUS MO-C SUB1 MINUSX WAS 4.266 KX AT 40 AT. PERCENTC, AND 4.243 KX AT 38 AT. PERCENTC.

UNCLASSIFIED

USSR

UDC 593.42

RUDNEVSKIY, N. K., MAKSIMOV, D. YE., and SHABANOVA, T. M.

"Investigation of the Sensitivity Increase of Spectral Determination of Micro-impurities Using a Discharge With Hollow Cathode in the Magnetic Field"

V Sb. "VII Ural'sk. Konf. po Spektroskopii, 1971. Vyp.1" [In the Collection "Seventh Ural Conference on Spectroscopy, 1971. No 1".], Sverdlovsk, 1971, pp 12-14 (from Referativnyy Zhurnal, No 10, Oct 72. 32. Metrologiya i Izmeritel'naya Tekhnika. Single Issue. Abstract No 10.32.990 by V. S. K.)

Translation: An investigation was made of a series of spectroscopic characteristics of a discharge with a hollow cathode in an axial magnetic field, and the possibility of using this field for increasing the sensitivity in analyzing microadmixture of elements was determined. Results of carried out investigations showed that the discharge with a hollow cathode in the magnetic field can be used as excitation source in spectral determination of elements according to curved lines with low excitation potentials, as 45 among the 70 elements, located in the upper part of the periodic system, have the last lines of atoms with excitation potentials less than 5 ev. The sensitivity in determining elements in a hollow cathode, when superimposing a magnetic field, exceeds by a factor of one the sensitivity achieved under similar conditions without field.

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USSR

RUDNEVSKIY, N. K., et al, V Sb. "VII Ural'sk. Konf. po Spektroskopii, 1971, Vyp. 1"

The reproductiveness of the analysis, rated according to the magnitude of the mean square error, is similar in both cases and amounts to 15-35%. Two illustr., one table, eleven biblio. refs.

UDC: 8.74

USSR

BONDARENKO, M. F., PUTYATIN, Ye. P., SHABANOV-KUSHNARENKO, Yu. P.

"Axiomatic Construction of a Mathematical Model of Visual Adaptation"

Kibernet. i vychisl. tekhn. Resp. mezhved. sb. (Cybernetics and Computer Technology. Republic Interdepartmental Collection), 1972, vyp. 14, pp 40-49 (from RZh-Kibernetika, No 5, May 73, abstract No 5V852 by the authors)

Translation: The article deals with questions of axiomatic construction of a mathematical model of visual adaptation. The validity of the axioms is confirmed by experiments.

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USSR

UDC: 8.74

MAYSTROVSKAYA, L. M., OL'KHOVSKIY, Yu. G., SHABANOV-KUSHNA-
RENKO, Yu. P.

"Conditions of Existence of Threshold Scales"

Probl. bioniki. Resp. mezhved. temat. nauch.-tekhn. sb. (Prob-
lems of Bionics. Republic Interdepartmental Thematic Scientific
and Technical Collection), 1972, vyp. 9, pp 3-9 (from RZh-
-Kibernetika, No 5, May 73, abstract No 5V850 by A. Model')

Translation: The paper deals with the problem of establish-
ing zones of indistinguishability or thresholds in studying
the function of human receptors. The problem is given in the
following formulation. To determine the function f , called
the threshold scale, as dependent on

$$z = L(|f(x) - f(y)|),$$

where x, y are one-dimensional stimuli of different physical
nature, f is a continuous function definable from the results
of psychological testing, and L is a function given by the

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USSR

MAYSTROVSKAYA, L. M. et al., Probl. bioniki. Resp. mezhved.
temat. nauch.-tekhn. sb., 1972, vyp. 9, pp 3-9

condition

$$L(\xi) = \begin{cases} 1 & 0 \leq \xi < 1 \\ 0 & 1 \leq \xi < \infty. \end{cases}$$

Functioning of the receptor is given by the expression
 $z = F(x, y)$, where $x, y \in [0, 1]$, z is equal to 0 or 1. The article
proves a number of theorems relative to necessary and suf-
ficient conditions to which the function F conforms.

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USSR

UDC: 62.506.2

SHABANOV-KUSHNARENKO, Yu. P., YAKIMENKO, L. I.

"On a Mathematical Model for Morphological Classification of a Set of Nouns in the Russian Language"

Probl. bioniki. Resp. mezhved. temat. nauch.-tekhn. sb. (Problems of Bionics. Republic Interdepartmental Thematic Scientific and Technical Collection), 1971, vyp. 6, pp 104-107 (from RZh-Kibernetika, No 12, Dec 71, Abstract No 12V1044)

Translation: A program model is constructed and realized for morphological classification of a set of nouns by types of declension. The operating principle of the model is based on the idea of the null-method -- a modification of the cybernetic "black box" method. The model includes procedures (blocks) of word differentiation, recognition, comparison and printout. A central part is played by the recognition procedure which is designed for determining (on the basis of formal features) the type of declension of a given word. Morphological classification of the initial data is realized by comparing the types of declension of each pair of words appearing at the input. Author's abstract.

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USSR

UDC 577.391:582.26

SHABANOVA, YE. A., Institute of General Genetics, Academy of Sciences USSR,
Moscow

"Effect of Chronic Gamma-Irradiation on *Chlorella*"

Moscow, Radiobiologiya, Vol 12, No 1, Jan/Feb 72, pp 140-144

Abstract: *Chlorella vulgaris* Beyer was exposed to 150, 300, 450, and 750 rad doses of gamma-rays at 50-75 rad/day and then stored in an inactive state (G₁ stage). A study of the mutagenic effect of irradiation (number of mutations in 10⁶ cells/rad) showed that the 150 rad dose was most effective during the first days of storage. After 5 days, the 300 rad dose produced the most mutations. The effect of larger doses increased with length of storage, but by the 10th day, mutations began to approach control level in all cases. The changes in number of mutations were wave-like -- drop, rise, drop -- with all doses, although peak activity depended on length of storage.

1/1

- 24 -

1/2 026 UNCLASSIFIED PROCESSING DATE--30OCT70
TITLE--MECHANISM OF HYDROGEN PEROXIDE DECOMPOSITION BY COPPER AMMONIATES

-U-
AUTHOR-(03)-SHABARCHINA, L.I., BERONIKOV, V.M., PURMALIS, A.

COUNTRY OF INFO--USSR

SOURCE--ZH. FIZ. KHIM. 1970, 44(1), 265-6

DATE PUBLISHED-----70

SUBJECT AREAS--CHEMISTRY

TOPIC TAGS--CHEMICAL REACTION MECHANISM, HYDROGEN PEROXIDE, CHEMICAL
DECOMPOSITION, COPPER COMPOUND, AMMONIA, UV RADIATION

CONTRL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED

PROXY REEL/FRA--2000/2064

STEP NO--UR/0076/70/044/001/0265/0266

CIRC ACCESSION NO--AP0125651

UNCLASSIFIED

2/2 026

UNCLASSIFIED

PROCESSING DATE--30OCT70

CIRC ACCESSION NO--AP0125651

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. THE EXPRESSION FOR THE RATE OF REACTION IN THE SYSTEM $H \text{ SUB2 } O \text{ SUB2, } CU \text{ PRIME2POSITIVE, } NH \text{ SUB3}$ HAS THE FORM $W \text{ EQUALS } N(CU \text{ PRIME2POSITIVE}) (H \text{ SUB2 } O \text{ SUB2}), (H \text{ PRIME POSITIVE})$, WHERE $N \text{ EQUALS FUNCTION}(NH \text{ SUB3})$. ANAL. OF THE DEPENDENCE OF N ON $(NH \text{ SUB3})$ SHOWED THAT $CU(NH \text{ SUB3}) \text{ SUB2 PRIME2POSITIVE}$ AND $CU(NH \text{ SUB3}) \text{ SUB3 PRIME2POSITIVE}$ ARE THE CATALYTICALLY ACTIVE FORMS. THE MECHANISM OF THE PROCESS IS NOT KNOWN. W DECREASES WHEN QUINONS, ORG. ACIDS, ALCS., NITRILES, AMIDES, AND NO $\text{SUB2 CONTG. COMPS.}$ ARE ADDED. THE PROCESS IS NOT ACCELERATED BY THE UV IRRADN. A RADICAL CHAIN MECHANISM WITH HIGH RATE OF INITIATION AND SHORT KINETIC CHAIN LENGTH IS PROPOSED. FACILITY: INST. KHIM. FIZ., MOSCOW, USSR.

UNCLASSIFIED

1/2 010 UNCLASSIFIED PROCESSING DATE--23OCT70
TITLE--DINUCLEOSIDE PHOSPHO,P YIELDS N, AMINO ACIDS. HYDROLYSIS OF
DIURIDINE PHOSPHO,P SUBM YIELDS N, PHENYLALANINE -U--
AUTHOR-(03)-VOROBYEV, O.YE., SHABAROVA, Z.A., PROKOFYEV, M.A.
COUNTRY OF INFO--USSR
SOURCE--DOKL. AKAD. NAUK SSSR 1970, 190(4), 842-5
DATE PUBLISHED-----70
SUBJECT AREAS--BIOLOGICAL AND MEDICAL SCIENCES
TOPIC TAGS--HYDROLYSIS, PHENYLALANINE
CONTROL MARKING--NO RESTRICTIONS
DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRA--1994/1090 STEP NO--UR/0020/70/190/004/0842/0845
CIRC ACCESSION NO--AT0115109
UNCLASSIFIED

UNCLASSIFIED

PROCESSING DATE--23OCT70

2/2 010

CIRC ACCESSION NO--AT0115109
ABSTRACT/EXTRACT--(U) GP-0-

ABSTRACT. 1 IS PRACTICALLY INERT TO ALKALI AT PH 10.5 IN 1 HR AT 37DEGREES, WHILE IN 6 HR THE HYDROLYSIS IS NOT OVER 15PERCENT. HOWEVER IN 20 HR UNDER THE SAME CONDITIONS ALMOST 90PERCENT OF THE COMPD. IS DESTROYED. THE INTERNUCLEOTIDE LINK IN 2 PRIME, ACETYLATED DIURIDINE PHOSPHATE IS ALMOST NOT AFFECTED AT ALL UNDER THESE CONDITIONS. THUS THE ALK. CLEAVAGE OF 1 IS DETD. BY THE RATE OF DEACETYLATION OF THE 2 PRIME-OH GROUP. THE KINETIC DATA WERE TABULATED FOR 1, DIURIDINE PHOSPHATE, URIDINE CYCLOPHOSPHATE, O, ISOPROPYLIDENEURIDINE, PHENYLALANINE ME ESTER AT PH 10.5 AT 37DEGREES. 1 IN N HCL IN 1 HR AT 37DEGREES GAVE EQUIMOLAR AMTS. OF DIURIDINE PHOSPHATE AND THE AMINO ACID. IN N NAOH IN 18 HR 1 GAVE 2 PRIME (3 PRIME), URIDYLIC ACID, O, ISOPROPYLIDENEURIDINE AND PHENYLALANINE. FACILITY: MOSK. GOS. UNIV. IM. LOMONOSOVA, MOSCOW, USSR.

UNCLASSIFIED

Turbine and Engine Design

USSR

UDC 621.515-154:533.6.001.24

BEKNEV, V. S. and SHABAROV, A. B.

"Variational Method for Solving the Basic Problems in the Theory of Turbine Machines"

V sb. Gazoturbin. i kombinir. ustanovki (Gas-Turbine and Combination Units — collection of works), Moscow, 1971 (1972), pp 93-97 (from RZh-49. Turbostroyeniye, No 4, Apr 73, Abstract No 4.49.114)

Translation: In order to optimize the stage of an axial compressor, a variation problem is set up for the flow in the stage. The minimum functional is found which represents the coefficient of blade diffusion averaged with respect to consumption. Under these conditions, the consumption, pressure, and the dimensions of the flow through part are considered as given. The equations for the flow yield additional differential and finite relationships. The local values for the coefficient of diffusion are limited by a given value. It is shown that the parameters of the stage calculated in this way will ensure the maximum range of stable operation. In the case of an axial turbine stage, it is proposed that the maximum coefficient of efficiency is found for given consumption and heat differential. The calculations should be carried out in sequential approximations in each of which the direct and inverse problems should be solved for the flow in the stage. Data on losses in the screen should be used also. Original article: 1 illus. and 9 bibl. Yu.V.R.

1/1

USSR

UDC:621.438.536.2

CHERNOBROVKIN, A. P. and SHABAROV, A. B.

"On Calculation of Closed Cycle Taking Into Account Real Properties of Working Fluid"

Moscow, Sb. Gasoturbin. i Kombinir. Ustanovki (Symposium on Gas Turbine and Combined Installations), 1971 (1972), pp 37-45 (from Referativnyy Zhurnal-Turbostroyeniye, 1973, Abstract No 3.49.89)

Translation: In order to take into account the real properties of gases it is necessary to consider the effect of pressure as well as of temperature on the specific heat and to replace the clapeyron equation of state $PV=RT$, which is true for ideal gas only, by the Bitti-Bridgeman semi-empiric equation of state $PV=\gamma RT$, which has low errors in the wide range of states for gases used as working fluids in closed cycle gas turbine installations (He, N₂ and CO₂); γ is the compressibility factor.

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USSR

UDC: 533.932

NIZOVSKIY, V. L., SHABASHOV, V. I., Institute of High Temperatures of the Academy of Sciences of the USSR

"On the Problem of Measuring the Thermal Conductivity of a Hydrogen Plasma in a Stabilized Electric Arc"

Moscow, Teplofizika Vysokikh Temperatur, Vol 11, No 2, Mar/Apr 73, pp 251-255

Abstract: An explanation is proposed for the causes of the discrepancy between theoretical and experimental data on the thermal conductivity of a hydrogen plasma. It is shown that the deviation in the temperature region between the dissociation and ionization peak of thermal conductivity is due to the disruption of chemical equilibrium in the wall zone of the arc. In the temperature region beyond the ionization peak the concentration of neutral atoms changes by a considerable factor even with a small deviation of the degree of ionization from equilibrium. This may lead to an appreciable error in the measurement of temperatures and hence to an error in determination of thermal conductivity. The authors thank E. I. Asinovskiy for formulating the problem and for continued interest in the work.

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USSR

UDC 517.946

SHABAT, A. B., Institute of Hydrodynamics, Siberian Department of the Academy of Sciences USSR

"One-Dimensional Scattering Theory. I"

Minsk, Differentsial'nyye Uravneniya, Vol 8, No 1, Jan 72, pp 164-178

Abstract: The article considers the primal and inverse problems of scattering theory for a system of hyperbolic equations on a plane

$$(D_1 + D_2) u^1(x, y) = p_1(x) u^2(x, y), \quad (1)$$

$$(D_1 - D_2) u^2(x, y) = p_2(x) u^1(x, y)$$

with integrable and, generally speaking, discontinuous coefficients which satisfy the condition

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USSR

SHABAT, A. B., *Differentsial'nyye Uravneniya*, Vol 8, No 1, Jan 72, pp 164-178

$$\int_{-\infty}^{+\infty} |\rho_j(x)| dx < \infty, \quad j = 1, 2.$$

Of special interest are two particular cases of system (1):

$$(D_1 + D_2)u^1 = pu^2, \quad (D_1 - D_2)u^2 = \overline{p}u^1 \quad (2)$$

and

$$(D_1 + D_2)u^1 = pu^2, \quad (D_1 - D_2)u^2 = -\overline{p}u^1, \quad (3)$$

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SHABAT, A. B., *Differentsial'nyye Uravneniya*, Vol 8, No 1, Jan 72, pp 164-178

with the dash here denoting complex conjugation. From the standpoint of the inverse problem system (2) is simpler than the classical Sturm-Liouville equation and in the case $\text{Im } p = 0$ reduces to a single second-order equation:

$$(D_1^2 - D_2^2)(u^1 \pm u^2) = \left(p^2 \pm \frac{d}{dx} p\right)(u^1 \pm u^2).$$

System (3) is almost as complex as a Sturm-Liouville equation with complex potential, but unconditional theorems on the solvability of the inverse problem can be obtained for it.

The article overlaps a previous article by M. G. KREYN, as well as another by Z. S. AGRANOVICH and V. A. MARCHENKO on the inverse scattering problem, but the present exposition is independent and places the main

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USSR

SHABAT, A. B., *Differentsial'nyye Uravneniya*, Vol 8, No 1, Jan 72, pp 164-178

emphasis on a nonstationary approach to scattering theory, based on the representation of solutions of the Goursat problem through a fundamental solution of the Cauchy problem with data at infinity.

4/4

APPLICATION OF FACTOR ANALYSIS TO THE STUDY OF THE
FUNCTIONAL ORGANIZATION OF DYNAMIC
CHARACTERISTICS OF CEREBRAL ELECTRICAL ACTIVITY

[Bundzen, P.V., N.N. Vasilievsky, A.S. Kaplinovskiy, and V.V. Shabayev,
Pis'mennye faktorogo analiza dlya izucheniya funktsional'noy organizatsii
dinamicheskikh kharakteristik bioelektricheskoy aktivnosti bol'shogo
mozga, Sechenovskiy fiziologicheskii zhurnal of the USSR, Vol. 57, No. 7, 1971,
pp. 969-973, Russian]

Department of Ecological Physiology (Director N.N. Vasilievsky) and the Pavlov Physiological Department (Director M.M. Khramovskiy) Institute for Experimental Medicine, Academy of Medical Sciences, USSR, Leningrad.

The characteristics and methods of factor analysis, as well as the algorithm and program of the principal components method for the "Proton" digital computer system are described. The theoretical possibility of applying factor analysis in neurophysiology is shown in: a) an investigation of the structure of a single electrophysiological process on the basis of electroencephalographic dynamic spectra calculations, and b) a comparison and classification of poststimulation histograms of the induced activity of projection cortical neurons in response to a conditioned stimulus.

Thus, factor analysis is valuable as a statistical method in neurophysiology, making it possible to present experimental data in a convenient form and aiding in a purposeful search.

As an integral statistical method of evaluating the functional organization of complex dynamic processes, factor analysis is now receiving increasing application in physiological research [5, 8, 9, 12, and 13].

The purpose of the present study was to develop a program and to apply factor analysis for statistical processing of experimental neurophysiological material for the purpose of clarifying the set of conditions (factors) which determine the dynamic characteristics of cerebral bioelectrical activity, particularly when studying control processes at the level of continuous wave and pulse activity of the higher regions of the central nervous system.

As is well known [3, 4, and 14], at the basis of factor analysis is the calculation of a correlation matrix and its reduction to a more compact form that lends itself more easily to interpretation.

Hydrobiology

USSR

UDC 599.5-147.7:576.8

SHABAYEVA, Ye. K., Odessa Branch of the INBYUM [Institute of Biology of Southern Seas], Academy of Sciences, Ukrainian SSR

"Studies on Microflora of the Integument of Black Sea Dolphins in Captivity"

Kiev, Gidrobiologicheskii Zhurnal, Vol 8, No 6, 1972, pp 110-112

Translation: The microflora of Black Sea dolphins both in the sea and in captivity had not been studied before. In the literature available to us there is very little information concerning microflora of marine mammals and their diseases. There are, however, several descriptions of diseases of dolphins under natural conditions and in captivity.

Drawing on the data derived from the study of all cases of diseases of marine mammals recorded up to now [7-11], one may single out their following principal diseases: skin diseases of an infectious nature causing suppurative lesions, and generalized erysipelatous infections; inflammations of the lungs and cardiovascular diseases; and diseases of the gastrointestinal tract.

As a rule, dolphins die in captivity as a result of diseases of unknown etiology, or because of the improper maintenance of animals.

A. G. Tomilin notes cutaneous ulcerous lesions and cicatrices caused by them in common dolphins (*Delphinus delphis*) killed in catching them [5]. It is not unlikely that such cutaneous lesions could have resulted from mechanical

USSR

SHABAYEVA, Ye. K., *Gidrobiologicheskii Zhurnal*, Vol 8, No 6, 1972, pp 110-112

injuries. However, any breach of the barrier formed by skin cover contributes to the penetration into the organism of pathogenic microbes, and the occurrence of skin diseases in the form of all kinds of abscesses, caused by Staphylococci, Streptococci, and other pathogens of infectious diseases.

The appearance of microbes on the integument and their penetration into internal organs of marine mammals are not indifferent to the latter and doubtless definitely affects organism of the animal.

We have studied the integumentary microflora of Black Sea dolphins, viz.: bottle-nosed dolphins *Tursiops truncatus ponticus* B. (1940) and porpoises *Phocaena phocaena relicta* Abel (1905).

We have made use of adult animals without visible symptoms of skin diseases, i.e. normal ones, kept for a long time in the same basin at water temperatures of 14-19°C.

Five dolphins and 10 porpoises were investigated. Scrapings from the integument included all parts of the body, tail, head, ventral and dorsal fins, blowhole region, and were taken using a sterile spatula. Each area of the skin was previously treated with alcohol. The technique described in [1] was somewhat modified by us.

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USSR

SHARAYEVA, Ye. K., *Gidrobiologicheskii Zhurnal*, Vol 8, No 6, 1972, pp 110-112

The isolation of cultures and the study of their morphology, cultural peculiarities, and biochemical properties were carried out using generally accepted techniques of determination of the symptoms and specific characteristics of marine microorganisms [3,4].

Gram's method of staining was used for identification of microorganisms and ascertainment of their cultural properties, and the character of their growth was studied using gelatin, bouillon, slant fish-peptone agar, potato, and Endo's medium; relation to oxygen, ability to ferment sugars: glucose, lactose, mannitol, sucrose, and maltose, to form hydrogen sulfide, ammonia, indole, to reduce nitrates, as well as the ability to hydrolyze starch and ferment milk, were determined. The optimum growth at definite temperatures was also established.

Identification of cultures in relation to species was performed according to N. A. Krasil'nikov [2] and A. Ye. Kriss [3, 4].

25 strains of microbes, including coccal forms and nonsporogenic bacilli basically mobile, have been isolated in the investigated species of marine mammals. In the majority of cases they represented vividly pigmented forms, which is in general typical of marine bacteria [2, 6].

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USSR

SHABAYEVA, Ye. K., *Gidrobiologicheskii Zhurnal*, Vol 8, No 6, 1972, pp 110-112

The colors of strains prevailing among isolated microorganisms were: light-coffee color, white, yellow, bright-orange, bright-pink, and lemon color.

The coccal forms were represented by *Micrococcus candidus*, *M. citreus*, *M. albus*, *M. aureus*, *M. radiatus*, *Sarcina flava*. Nonsporogenic bacilli were: *Bacterium*, *Pseudomonas*, *Chromobacterium*, viz., *Bacterium agile*, *B. liquefaciens*, *B. album*, *B. halophilum*, *Pseudomonas sinuosa*, *Ps. furcosum*, as well as *Chromobacterium aquatile*, *Ch. chlorinum*, *Ch. auranticum*, *Ch. denitrificans*, and their varieties.

Escherichia coli, representing conditionally-pathogenic microorganisms, was also isolated. One should note that the microorganisms isolated by us from integuments of marine mammals are among most typical inhabitants of the corresponding marine areas [3, 4, 6]. In view of this, their presence on the integument of Black Sea dolphins may be explained apparently by the ability of microbes to adapt themselves to the upper layer of epidermis which is in direct contact with sea water, whence they are likely to penetrate into internal organs upon injury of the integument.

4/4

Photoelectric Effect

USSR

UDC 621.383.032.217.2

RUTKOVSKIY, I.Z., SHABEL', N.N.

"Conductivity Of Some Photocathodes During Cooling"

Vestn. Belorus. un-ta (Bulletin Of Belorussian University), Series 1, No 2, pp 88-89 (from RZh:Elektronika i yeye primeneniye, No 9, Sept 72, Abstract No 9A160)

Translation: The variation is studied of the value of the longitudinal resistance of semitransparent oxygen-silver-cesium and multialkali photocathodes during deep cooling. It is shown that the change of the longitudinal resistance of the cathodes of a photomultiplier which were studied was small in the temperature range 140--300° K. The temperature resistance coefficient of the photocathodes is nonlinear and differs in various models of multiplier with respect to both magnitude and sign. For the multipliers studied, cooling of the photocathode should not impair their characteristics. 1 ill. 5 ref.

1/1

1/2 020 UNCLASSIFIED PROCESSING DATE--18SEP70
TITLE--ON PREVALENCE OF HELMINTHIASES IN ONE OF THE REGIONS OF THE CHAD
REPUBLIC -U-
AUTHOR-(02)-SHABELNIK, V.I., CHECHUGO, I.S.
COUNTRY OF INFO--CHAD
SOURCE--MEDITSINSKAYA PARAZITOLOGIYA I PARAZITARNYYE BOLEZNI, 1970, VOL
39, NR 1, PP 96-98
DATE PUBLISHED-----70
SUBJECT AREAS--BIOLOGICAL AND MEDICAL SCIENCES
TOPIC TAGS--SCHISTOSOMIASIS, FILARIAE, SELECTIVE DRUG EFFECT, DISEASE
INCIDENCE
CONTROL MARKING--NO RESTRICTIONS
DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRAE--1985/0411 STEP NO--UR/0358/70/039/001/0096/0098
CIRC ACCESSION NO--APO100893
UNCLASSIFIED

2/2 020

UNCLASSIFIED

PROCESSING DATE--18SEP70

CIRC ACCESSION NO--AP0100893

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. IN OCTOBER DEC 1967 IN GERA PREFECTURE OF THE CHAD REPUBLIC THE AUTHORS EXAMINED 4253 SCHOOL CHILDREN AND 1000 PATIENTS. THEY TESTED STOOLS FOR THE PRESENCE OF EGGS OF PARASITES BY THE NATIVE SMEAR METHOD, THE URINE FOR THE PRESENCE OF EGGS OF URINARY SHISTOSOMA, THE THICK DROP OF THE BLOOD FOR THE PRESENCE OF MICROFILARIA. FOURTEEN SPECIES OF PARASITES WERE DETECTED. URINARY SCHISTOSOMIASIS WAS FOUND IN 26.59PERCENT OF SCHOOL CHILDREN AND 37PERCENT OF PATIENTS, ANCYLOSTOMIASIS IN 12.69 AND 32.2PERCENT FILARIASIS (TWO SPECIES) IN 8.37 AND 15.7PERCENT RESPECTIVELY, TAENIASIS IN 6.67 AND 8.3PERCENT ASCARIDIASIS IN 3.29 AND 6.8PERCENT, RESPECTIVELY. TREATMENT WITH AMBILGAR WAS GIVEN TO 103 PATIENTS WITH URINARY SCHISTOSOMIASIS, WITH SUCCESSFUL RESULTS ACHIEVED IN 89. IN SOME PATIENTS THE DRUG CAUSED NAUSEA, ABDOMINAL PAINS, VOMITING, HEADACHE, VERTIGO, ASTHENIA. THE AUTHORS CONSIDER AMBILGAR IN A DOSE OF 25 MG PER 1 KG OF BODY WEIGHT TO BE SUFFICIENTLY EFFECTIVE, BUT TOXIC, ITS USE REQUIRES FURTHER STUDY.

UNCLASSIFIED

15 R

UDC: 535.854

SHABEL'NIKOV, A. V., BEKHTIN, Yu. I., Institute of Radio Engineering and Electronics, Academy of Sciences of the USSR

"A Device for Measuring Phase Fluctuations in the Optical Band"

Moscow, Otkrytiya, Izobreteniya, Promyshlennyye Obraztsy, Tovarnyye Znaki, No 12, Apr 72, Author's Certificate No 334536, Division G, filed 19 Feb 70, published 30 Mar 72, pp 173-174

Translation: This Author's Certificate introduces: 1. A device for measuring phase fluctuations in the optical band. The device contains a laser, and measurement and reference channels. Installed in the measurement channel are a dual-beam optical system with the medium to be studied, a photomultiplier, an amplifier and a limiter. Installed in the reference channel are a dual-beam optical system, a photomultiplier and an amplifier. The device also includes a comparison circuit with the outputs of the above mentioned channels connected to its inputs, and also a recording device. As a distinguishing feature of the patent, sensitivity is increased, the dynamic and frequency ranges of the device are extended, the immunity of the device to interference from background noises is improved and continu-

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USSR

CHALIL'NIKOV, A. V., BEKHTIN, Yu. I., USSR Author's Certificate No 334536

ous recording of the signal is ensured by including a diffraction-Doppler modulator and collimating lens between the laser and the optical system.

2. A modification of this device distinguished by the fact that the diffraction-Doppler modulator is made in the form of a disc carrying a diffraction grating on its edge and rotated by an electric motor.

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- 100 -

USSR

UDC: 621.397.62:535.67(088.8)

5
KHOKHLOV, B. N., SHABEL'NIKOV, I. I.

"A Chrominance Signal Recognition Device for Color Television Receivers"

USSR Author's Certificate No 250983, filed 23 May 68, published 2 Feb 70 (from
RZh-Radiotekhnika, No 7, Jul 70, Abstract No 7G221 P)

Translation: A patent has been granted on a chrominance signal recognition device for a color television system in which the recognition signal is transmitted during transmission of the field-quenching pulses. The device contains an integrating circuit connected to the output of the color difference amplifiers, and a triggering unit. To reduce the effect which the transmitted image subject has on the operation of the device, a switching stage controlled by the blanking field pulses is connected between the output of the integrating circuit and the input of the trigger unit.

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UESR

UDC 621.039.623

ALEKSIN, V. F., BIRYUKOV, O. V., GEORGIYEVSKIY, A. V., KITAYEVSKIY, L. KH., KOMAR, YE. G., LOGINOV, A. S., MALYSHEV, I. P., MUKOSZON, N. A., POPKOVICH, A. V., ROZHDESTVENSKIY, B. V., SAKSAGANSKIY, G. L., SINEL'NIKOV, the late K. D., SOKOLOV, YU. A., SUPRUNENKO, V. A., TOLOK, V. T., CHURAKOV, G. F., and SHABEL'NIKOV, L. A.

"The Experimental Thermonuclear Device 'Uragan'"

Moscow, Atomnaya Energiya, Vol 28, No 1, Jan 70, pp 22-28

Abstract: An urgent task of stellarator research is a definitive elucidation of the reasons for anomalous diffusion in a stellarator, as well as the effect of the shear and magnetic well on the confinement of a hot and dense plasma. These questions will be studied on the "Uragan" stellarator. Construction of the "Uragan" stellarator was begun at the suggestion of I. V. KURCHATOV and completed in 1967. The physical substantiation and technical assignment of developing and constructing the complex were developed at the Physicotechnical

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USSR

ALEKSIN, V. F., et al., Atomnaya Energiya, Vol 28, No 1, Jan 70, pp 22-28

Institute of the Academy of Sciences Ukrainian SSR under the direction of K. D. SINEL'NIKOV, who took an active part in the solution of theoretical and technical questions. Organizations taking part in the development of the project and the construction of the complex included the Scientific Research Institute of Electrophysical Equipment imeni D. V. Yefremov, the Elektrosila Electrical Engineering Combine, the Khar'kov Polytechnic Institute imeni V. I. Lenin, the Electromechanical Plant and NIIElektroapparat [Scientific Research Institute of Electrical Equipment] in Khar'kov. A considerable amount of work on the development, manufacture, and adjustment of the systems and components of the "Uragan" was done at the Physicotechnical Institute of the Academy of Sciences Ukrainian SSR.

The principal feature of the "Uragan" is high shear (of the order of 0.02 and 0.1) at a high level of magnetic field strength

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USSR

ALEKSIN, V. F., et al., Atomnaya Energiya, Vol 28, No 1, Jan 70, pp 22-28

H_0 (35 and 10 koe respectively). The stellarator is in the shape of a racetrack and uses a high-shear triplex helical field. The vacuum chamber of the trap consists of two semi-tori with an average radius $R = 1100$ mm and two rectilinear sectors, each 1725 mm long. The internal diameter of the chamber is 200 mm. On the outside of the chamber on the toroidal sectors are two helical windings and longitudinal magnetic field coils, distributed evenly along the device. The maximum strength of the magnetic field is 10 koe under steady-state conditions and 35 koe under pulsed conditions. Three windings are used; viz., longitudinal magnetic field, helical, and transverse magnetic field. All metallic elements are made of low-magnet steel 1Kh18N9T. The toroidal sectors of the vacuum chamber and part of the rectilinear sectors are made of stainless nonmagnetic alloy EP-125. The article gives a detailed description of the windings, cooling system, electric power supply system, vacuum system, and plasma diagnostic and heating system.

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1/2 010 UNCLASSIFIED PROCESSING DATE--20NOV70
TITLE--COMPLEXES OF COBALT, II, AND COBALT, III, WITH ISONICOTINIC ACID
HYDRAZIDE AND SOME OF ITS DERIVATIVES --U-
AUTHOR--(03)--KHAKIMOV, KH.KH., SHABILALOV, A.A., AZIZOV, M.A.
COUNTRY OF INFO--USSR
SOURCE--ZH. NEORG. KHIM. 1970, 15(4), 1022-6
DATE PUBLISHED-----70
SUBJECT AREAS--CHEMISTRY
TOPIC TAGS--MOLECULAR STRUCTURE, HETEROCYCLIC NITROGEN COMPOUND, ORGANIC
COMPLEX COMPOUND, CHEMICAL SYNTHESIS, ORGANOCOBALT COMPOUND,
HETEROCYCLIC OXYGEN COMPOUND, AZIDE
CONTROL MARKING--NO RESTRICTIONS
DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRAME--3004/2032 STEP NO--UR/0078/70/015/004/1022/1026
CIRC ACCESSION NO--AP0132289
UNCLASSIFIED

2/2 010

UNCLASSIFIED

PROCESSING DATE--20NOV70

CIRC ACCESSION NO--AP0132289

ABSTRACT/EXTRACT--(U) GP-Q- ABSTRACT. IN ORG. SOLVENT SOLNS., COOL SUB2
.6H SUB2 O FORMS ADDUCTS WITH ISONICOTINIC ACID HYDRAZIDE (I), II, III,
OR IV AND IN BASIC SOLNS. IT FORMS COMPLEXES. THE SYNTHESIS OF (SHOWN
ON MICROFILME) IS GIVEN AND THEIR SOLY. IN WATER, MPS., AND ELEC. COND.
ARE GIVEN. THE INVESTIGATED LIGANDS EASILY REPLACE ALL NO SUB2 GROUPS
IN NA SUB3 (CO(NO SUB2) SUB6). H SUB2 O IN THESE COMPLEXES IS IN THE
OUTER SPHERE. COMPN. OF THE PRODUCTS IS INDEPENDENT OF REACTANT RATIO
WHEN NA SUB3 (CO(NO SUB2) SUB6) IS USED AS A REACTANT. FACILITY:
TASHKENT. FARM. INST., TASHKENT, USSR.

UNCLASSIFIED

USSR

SHABLINSKIY, C. E.

UDC 624.539.4

"The Influence of Certain Conditions of Construction on the Stress State of Massive-Buttress Dams During Seismic Loading"

Moscow, Vses. konf. Metody opredeleniya napryazh. sostoyaniya i ustochivosti vysokonoporn. gidrotekhn. sooruzh. i ikh osnovaniy pri statich. i dinamich. nagruzkakh. Tezisy dokl. (All Union Conference on the Methods of Determining the Stress Condition of Stability of High-Pressure Hydraulic Engineering Structures and Their Foundations During Static and Dynamic Loading, Thesis Report, Collection of Works), 1972, pp 371-382 (from Referativnyy Zhurnal -- Mekhanika, No 4, 1973, Abstract No 4V1086 by V. B. Geronimus)

Translation: The influence of low-quality, site-cast structural seams is considered, for a dam in a stress condition due to a transverse earthquake, and also the influence of the gradual raising of a dam in a stress state from seismic loading. The investigations were conducted on 1:200-scale models. The tests showed that on stepwise opening of vertical structural seams in the walls and foundation a redistribution of stresses did not originate in the walls nor did a concentration of stresses arise. If under work production conditions a full opening of the vertical seams is excluded, then their possible partial unsealing in separate portions does not influence the seismic stability of the

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USSR

SHABLIINSKIY, G. E., Vses. konf. Metody opredeleniya napryazh. sostoyaniya i ustochivosti vysokonaporn. gidrotekhn. sooruzh. i ikh osnovaniy pri statich. i dinamich. nagruzkakh. Tezisy dokl., 1972, pp 371-382

dam in the transverse direction.

During the action of a nine-point earthquake on a massive-buttress dam several stages of which are completed, the stresses in it from longitudinal and transverse seismic action for the intermediate stages does not exceed the stresses, arising in a dam completely finished. In this manner the seismic stability of a dam in the period of its construction will be guaranteed not less than for a completely finished structure. (5 bibliographic entries)

2/2

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USSR

UDC: 539.4:624

GORDIYENKO, P. I., SHABLINSKIY, G. E.

"Experimental Research on the Seismic Stability of Light Gravity Dams"

Tr. Vses. proyektno-izyskat. i NII "Gidroproekt" (Works of the All-Union Institute of Preliminary Study and Design, and of Scientific Research in the Planning of Hydraulic Structures), 1971, sb. 20, pp 136-151 (from RZh-Mekhanika, No 7, Jul 71, Abstract No 7V911)

Translation: The paper gives the procedure and results of experimental studies of the seismicity of light gravity dams on scale models. Special modeling materials are described, as well as the peculiarities of modeling a seismic load, measuring equipment used in the experiments. Presented in the results of the research are the dynamic characteristics and the stressed state of the most typical structural elements. Some design measures are proposed on improving the seismic stability of dams. An outline is given of the procedure of prepared studies on a large-scale model with reproduction of seismic loads by means of special explosions. Authors' abstract.

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USSR

UDC: 539.4:624.011

GORDIYENKO, P. I., SHABLINSKIY, G. E.

"Some Problems in Scale-Model Studies of the Earthquake Resistance of Structures"

V sb. Modelir. stroit. konstruktsiy (Modeling of Structural Elements--collection of works), Moscow, Stroyizdat, 1971, pp 65-71 (from RZh-Mekhanika, No 7, Jul 71, Abstract No 7V871)

Translation: The paper deals with problems of setting up scale-model studies of the seismic resistance of large structures typified by high concrete dams. In these cases, an increase in the dimensions of the model does not give the researcher any appreciable advantages from the standpoint of improving the accuracy of an experiment, but only makes the research considerably more complicated and expensive. In order to make small-scale models, development of special materials with low modulus of elasticity and high specific weight was required. The article reports on various methods of modeling a seismic load, and on equipment used in measurements on models. Authors' abstract.

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USSR

UDC 539.374

NEMIROVSKIY, YU. V., SHABLIY, O. N., MIKHALISHIN, M. S., Novosibirsk, Ternopol'

"Limiting State of Structural Elements Made of Materials with Different Yield Points under Tensile and Compressive Loads"

Kiev, Prikladnaya Mekhanika, Vol IX, No 10, 1973, pp 3-11

Abstract: This paper was given at the Symposium on New Methods of Calculating Strength and Rigidity held in Nikolayev on 24-27 May 1972. A study was made of the limiting equilibrium of thin plates and shells executed from material with different yield points under tensile and compressive loads. The yield hypersurfaces were constructed for cases where the material of the structural element is subjected to linearizations of the Balandin plasticity condition of the Tresk type [P. P. Balandin, "Problem of Strength Hypotheses," Vestnik inzhenerov i tekhnikov, No 1, 1937] and maximum reduced stress. The complete solutions of the problems of limiting equilibrium of circular and annular plates were obtained as examples. Known solutions were obtained in the special case of "unimodular" material.

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USSR

UDC: 539.374

ZHUK, N. P., SHABLIY, O. N., Ternopol'

"Limiting Equilibrium of a Circular Plate Considering Shear Stresses"

Kiev, Prikladnaya Mekhanika, Vol 9, No 6, Jun 73, pp 47-53.

Abstract: The limiting state of a circular plate under the influence of a load distributed evenly over a concentric area is studied on the basis of the hypothesis of S. P. Timoshenko. The linearized creep condition of Mises, altered considering the reduction in shear creep limit, is accepted. Conditions are studied under which shear hinges appear in the plate. It is demonstrated that the plate may lose the shear load-bearing ability, at which point a certain central concentric area drops out of the plate.

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USSR

UDC 539.374

KUPRIYCHUK, P. F., SHABLIY, O. N., Ternopol'

"Study of Carrying Capacity of Smooth Envelopes of Rotation of Variable Thickness"

Problemy Prochnosti, No 10, 1971, pp 38-44.

Abstract: The carrying capacity of gently sloped shells of rotation of variable thickness is studied, as well as the savings of material depending on the parameters of the geometry of the shell and the methods of fastening it at the contour. It is determined that in designing shells, optimal selection of its geometric parameters can result in significant savings of materials.

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1/2 019 UNCLASSIFIED PROCESSING DATE--27NOV70
TITLE--CARRYING CAPACITY OF SHALLOW SHELLS OF REVOLUTION WHOSE MATERIAL
HAS DIFFERENT YIELD POINTS IN TENSION AND COMPRESSION -U-
AUTHOR--(02)-SHABLIY, O.N., MIKHALISHIN, M.S.
COUNTRY OF INFO--USSR
SOURCE--PROBLEMY PROCHNOSTI, VOL. 2, MAY 1970, P. 52-58
DATE PUBLISHED-----70
SUBJECT AREAS--MECH., IND., CIVIL AND MARINE ENGR
TOPIC TAGS--SHELL STRUCTURE STABILITY, SHELL THEORY, MATHEMATIC
EXPRESSION, STRESS LOAD, SHELL OF REVOLUTION
CONTROL MARKING--NO RESTRICTIONS
DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRA--3006/1437 STEP NO--UR/3663/70/002/000/0052/0058
CIRC ACCESSION NO--AP0135108
UNCLASSIFIED

UNCLASSIFIED

PROCESSING DATE--27NOV70

2/2 019

CIRC ACCESSION NO--AP0135108
ABSTRACT/EXTRACT--(U) GP-0-

ABSTRACT. DERIVATION OF RELATIONS FOR CALCULATING THE CRITICAL LOAD AS A FUNCTION OF THE GEOMETRIC AND MATERIAL PARAMETERS OF A SHALLOW SHELL OF REVOLUTION MADE FROM A MATERIAL HAVING DIFFERENT YIELD POINTS UNDER TENSION AND COMPRESSION. THE RELATIONS ARE DERIVED WITH THE AID OF PRAGER'S (1958) AND LEPIK'S (1969) YIELD CONDITIONS. THE USE OF THE RELATIONS IS DEMONSTRATED IN APPLICATION TO A SHALLOW SPHERICAL SHELL SUBJECTED TO UNIFORMLY DISTRIBUTED EXTERNAL PRESSURE. FACILITY: L'VOVSKII POLITEKHNICHESKII INSTITUT, TERNOPOL, UKRAINIAN SSR.

UNCLASSIFIED

UNCLASSIFIED

PROCESSING DATE--03JUL70

TITLE--DETERMINATION OF THE CARRYING CAPACITY OF SHALLOW SHELLS OF
REVOLUTION -L-

AUTHOR--KUPRIYCHUK, P.F., SHABLIY, O.N.

COUNTRY OF INFO--USSR

SOURCE--PRIKLADNAIA MEKHANIKA VOL. 6, JAN. 1970, P. 34-42

DATE PUBLISHED-----70

SUBJECT AREAS--MECH., IND., CIVIL AND MARINE ENGR

TOPIC TAGS--THICKNESS, MECHANICAL ENGINEERING, SHELL DEFORMATION, SHELL
STRUCTURE STABILITY, STRESS LOAD

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED

PREXY REEL/FRAME--1978/1246

STEF AC--UR/C198/70/006/C00/C034/C042

CIRC ACCESSION AC--APCC46169

UNCLASSIFIED

13
5
18

Acc. Nr:

AP0046169

Abstracting Service: 5/70
INTERNAT. AEROSPACE ABST.

Ref. Code:

UR0198

A70-23288 # Determination of the carrying capacity of shallow shells of revolution (Opredelenie nesushchei sposobnosti pologikh obolochek vrashcheniia). P. F. Kupriichuk and O. N. Shablil (L'vovskii Politekhnikheskii Institut, Ternopol, Ukrainian SSR). Prikladnaia Mekhanika, vol. 6, Jan. 1970, p. 34-42. 10 refs. In Russian.

Application of the engineering theory of plastic shells to the determination of the buckling stress of clamped shells of constant and variable thickness under transverse loading. It is assumed that the strains and displacements are small, that the shell material is rigid-plastic, that the Tresca yield condition is valid, and that the limiting state of the shell is characterized by the development of plastic strains in the entire volume of the shell prior to buckling. The limiting equilibrium of a shallow clamped spherical shell of linearly varying thickness subjected to a transverse load is determined as an example.

V.P.

ALS

REEL/FRAME
19781246

18

USSR

UDC 535.373.3096

YERMOLAYEV, V. L., KRASHENINNIKOV, A. A. and ShABLYA, A. V.

"The Effect of Temperature on the Luminescence Quenching Constant in Complexes with a Hydrogen Bond"

Leningrad, Optika i Spektroskopiya, Vol 34, No 6, Jun 73, pp 1232 - 1234

Abstract: In Volume 32 of this Journal, page 564, the authors described a process in which first a proton and then an electron are transferred along the hydrogen bond. Processes occurring between the pair of radicals thus formed reduce the complex to the ground state with a radiation loss of electron excitation. It was also shown that the rate of quenching depends on the rates of three sequential processes: complex formation, proton migration, and electron migration. Considering the last two processes, proton migration is seen to be three orders of magnitude slower, to begin with, and further impeded by the small difference in oxidation-reduction properties of the complex units, leading to the conclusion that it is the limiting process. Since tunnelling is the most likely mechanism of proton transport, it is concluded that the effect of temperature on tunnelling probability will be the determining factor.

> Experiments were conducted with strong solutions of diphenylenimid-pyridine and 2-naphthol-pyridine at 77°K and 4°K. The results were in reasonable agreement with the assumption that the determining factor is the effect of temperature on
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USSR

YERMOLAYEV, V. L., et al., Leningrad, Optika i Spektroskopiya, Vol 34, No 6,
June 73, pp 1232 - 1234

the populations of proton oscillation levels.

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USSR

UDC 535.373.3

YERMOLAYEV, V. L., KRASHENINNIKOV, A. A., and SHABLYA, A. V.

"Mechanism of Quenching of Carbazole and Pyrazine Luminescence During Hydrogen Bond Formation"

Leningrad, Optika i Spektroskopiya, Vol 32, No 4, Apr 72, pp 831-833

Abstract: Carbazole, N-methyl carbazole, and pyrazine were the luminescent molecules studied; pyridine, quinoline, and indole, the quenchers. The only combinations used were those in which the fluorescent level of the luminescent molecule was situated below the first singlet excitation level of the quencher molecule. Measurements were made in solid solutions at 77° K. It was found that carbazole luminescence is quenched in the presence of quinoline and pyridine; pyrazine luminescence, in the presence of indole. The quenching magnitude I_0/I is linearly dependent on the quencher concentration. Quenching constants (complexing constants) are obtained from the slope of the I_0/I lines. In the carbazole-quinoline, pyrazine-indole systems no sensitized phosphorescence of the quenchers quinoline and indole was found,

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YERMOLAYEV, V. L., et al., Optika i Spektroskopiya, Vol. 32, No 4, Apr 72, pp 831-833

whereas it takes place for the N-methyl carbazole-quinoline system. This fact, as well as the fact that the concentration quenching curves and complexing constants are the same both for fluorescence and for phosphorescence, indicates that the processes of deactivation of the excitation electronic state as a result of the H bond take place in the singlet excitation state and are not due to intensification of intercombination conversion. It is believed that luminescence quenching in the investigated toluene solutions at 77° K is due to the formation of H-bond complexes. The disappearance of quenching in the transition to N-methyl carbazole and data in the literature confirm this viewpoint. A physical model is suggested to explain luminescence quenching during H-bond formation in a solid solution. Fluorescence quenching in the complex cannot be related to radiationless energy transfer over singlet levels. The most probable process to explain such quenching is electron transfer. The necessity of an H bond for quenching indicates the role of local interactions through an unshared electron pair.

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USSR

UDC 542.952.6454.1.15

VLASOV, A. V., KOMAROVA, L. I., Corresponding Member of the Academy of Sciences USSR KORSHAK, V. V., MALAKHOVA, L. I., MIKHELEVA, G. A., TSEPLIN, B. L., SHABLYGIN, N. V., Institute of Organo Elemental Compounds, Moscow, Academy of Sciences USSR; All-Union Scientific-Research Institute of Synthetic Fibers, Kalinin, State Committee for Chemistry USSR

"Production of Multilayer Graft-Polymerized Materials ("Pemosors") by Radiation Polymerization in the Gas Phase"

Moscow, Doklady Akademii Nauk SSR, Vol 193, No 3, 21 Jul 70, pp 615-617

Abstract: Multiple graft polymerization should lead to the formation of multilayered materials, in the opinion of the authors. A synthesis was developed for doubly grafted materials by gas-phase polymerization of various monomers to stretched polyethylene and polypropylene films and fibers. The graft polymerization was carried out by irradiating with X-rays substrates (of fibers and films and singly grafted materials) in the presence of unsaturated

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USSR

VLASOV, A. V., et al, Doklady Akademii Nauk SSR, Vol 193, No 3, 21 Jul 70, pp 615-617

monomer vapors. The following monomer pairs were so polymerized: acrylonitrile/vinylidene chloride, vinylidene chloride/acrylonitrile, vinylidene chloride/acrylic acid, acrylic acid/vinylidene chloride, vinyl chloride/vinylidene chloride, styrene/vinylidene chloride, methyl methacrylate/vinylidene chloride, vinylidene chloride/methyl methacrylate, acrylic acid/acrylonitrile. Films and fibers of a three-layer structure with minute particles between the layers were obtained. The orientation of the grafted layers was studied by IR spectroscopy. It was found that a singly grafted material will add a third layer whenever its first layer has a highly ordered structure (for instance, polyvinylidene chloride, polyacrylonitrile). The orienting effect of the grafted layer is retained even when it is quite thick. Formation of the now (third) layer begins in the interfibrillar channels of the intermediate (second) layer and the process follows the same scheme as the one in the gas-phase polymerization on the initial stretched substrate.

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USSR

VLASOV, A. V., et al, Doklady Akademii Nauk SSR, Vol 193, No 3,
21 Jul 70, pp 615-617

The passage of the orienting effect of the substrate on the formation of the third graft layer through a nonoriented intermediate layer may possibly be due to a repetition of the microrelief of the surface of the orienting original substrate or there may be a long-range effect of charged point defects.

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1/2 010
TITLE--POLYAMIDE INDOLE -U- UNCLASSIFIED PROCESSING DATE--27NOV70
AUTHOR--(04)-KUDRYAVTSEV, G.I., ODNORALOVA, V.N., NAZIMOVA, N., SHABLYGIN,
M.V.
COUNTRY OF INFO--USSR
SOURCE--VYSOKOMOL. SOEDIN., SER. B 1970, 12(5), 371-3
DATE PUBLISHED-----70
SUBJECT AREAS--CHEMISTRY
TOPIC TAGS--CONDENSATION REACTION, AMIDE, INDOLE DERIVATIVE, TOLUENE,
CHLORINATED ORGANIC COMPOUND, AROMATIC ANINE
CONTROL MARKING--NO RESTRICTIONS
DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRA--3006/1233 STEP NO--UR/0460/70/012/005/0371/0373
CIRC ACCESSION NO--AP0134907
UNCLASSIFIED

2/2 010

UNCLASSIFIED

PROCESSING DATE--27NOV70

CIRC ACCESSION NO--AP0134907

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. THE POLYCONDENSATION OF ISOPHTHALOYL DICHLORIDE WITH 2,4-DIAMINOTOLUENE GAVE I, WHICH WAS CYCLIZED TO II BY SWELLING I FILMS IN ETONA OR AC SUB2 0 AND HEATING THEM TO 340DEGREES IN VACUO. I AND II LOSE LESS THAN OR EQUAL TO 5 WT. PERCENT DURING HEATING IN AIR AT LESS THAN OR EQUAL TO 400DEGREES. THE WT. LOSS OF II REACHED 15PERCENT AT 460DEGREES. I IS NOT SOL. IN AMIDES OR CONCD. H SUB2 SO SUB4. FACILITY: YSES. NAUCH.-ISSLED. INST. ISKUSSTV. VOLOKNA, MYTISHCHI, USSR.

UNCLASSIFIED

USSR

UDC: 531.781.082.722:621.317.733.011.2

TIMOSHENKO, N. M., SHABOTENKO, V. I.

"Effect Which the Capacitance of Connecting Lines has on the Accuracy of Measurements by Strain-Gage Bridges on the Carrier Frequency"

Kontrol'no-izmerit. tekhnika. Resp. mezhved. nauch.-tekhn. sb. (Monitoring and Measurement Technology. Republic Interdepartmental Scientific and Technical Collection), 1971, vyp. 11, pp 104-110 (from RZh-Metrologiya i Izmeritel'naya Tekhnika, No 6, Jun 72, Abstract No 6.32.322)

Translation: The existing procedure for calculating the capacitance of connecting lines for strain-gage measurements is updated. Formulas are given for calculating the lines as a function of the phase matching of the voltages across the demodulator of the measuring instrument, the error due to change in the deformation sensitivity of the strain-gage resistors and amplifier sensitivity. It is shown that there is an appreciable difference between the line length calculated by the conventional procedure and by the procedure proposed by the author when the actual mismatch of voltages at the demodulator is accounted for. One illustration, bibliography of four titles.

1/1

USSR

KARTASHEV, YU. V., SHABRANSKIY, V. A.

"The Mutual Placement of Random Points on a Straight Line"

Vychisl. i Prikl. Mat. Mezhved. Nauch. Sb. [Computational and Applied Mathematics. Interdepartmental Scientific Collection], 1973, No 21, pp 145-151 (Translated from Referativnyy Zhurnal Kibernetika, No 9, 1973, Abstract No 9V13)

Translation: Let $x_0, x_1, \dots, x_n, \dots$ be a sequence of random quantities such that $x_n = n \cdot h + \epsilon_n$, where $\epsilon_n, n = 0, 1, \dots$, are independent, identically distributed random quantities, while h is an arbitrary real positive number.

Suppose the random quantities $\xi_0, \xi_1, \dots, \xi_n, \dots$ are such that

$$P\{\xi_0 = x_k\} = q^k p, \quad q = 1 - p$$

$$P\{\xi_k = x_n / \xi_{k-1} = x_l\} = \begin{cases} q^{n-l-1} p, & \text{where } l \leq n-1 \\ 0, & \text{where } l \geq n \end{cases}$$

The limiting behavior of the distributions and parameters of the random quantities $\xi_k^1 = \xi_{k+1} - \xi_k$ and $n_k^1 = |\xi_k^1|$

Author's view

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SHABRIN, A. N.

REDUCING THE HYDRAULIC DRAG IN PIPELINES
WITH POLYMER ADDITIVES

Article by V. A. Eshelovich and A. N. Shabrin, Institute of Hydromechanics,
Academy of Sciences of the Ukrainian SSR, Kiev, Gidromekhanika, Russian,
No 17, 1971, signed to press 16 February 1971, pp 105-111.

JPRS 55300
29 February 1972

Many investigators [1-13, et al.] have shown that the addition of small amounts of high molecular weight compounds (molecular weight of the order of $N = 10^5$) to water or to petroleum products significantly reduces the turbulent friction during the flow of these liquids. At the present time, a number of such macromolecular compounds (known from synthetic polymers) as well as from biological sources.

The investigations in this area are being carried out at the present time mostly within the framework of studies aimed at the elucidation of the relationships governing this effect. In the majority of cases, these experiments are unsystematic in character and do not provide a clear idea concerning the effect of the various flow conditions on the degree of drag in pipes carried out at the Institute of Hydromechanics, Academy of Sciences of the Ukrainian SSR in 1966-1968 had the aim of defining the effect of concentration and roughness of the walls, pipe diameter, velocity of the flow, presence or absence of a pump, mode of the polymer introduction into the stream, etc.

The aim of our present article is a detailed and systematic exposition of the experimental results obtained in the above studies. The results presented in Fig. 1, a and b, will provide an idea of the range of flow conditions employed in the experiments. The experiments were carried out in an open system without a pump (1-10, 16-18) as well as in a closed system with a centrifugal pump (11-15, 19-21). The pipes used in these studies were round pipes with the diameters of 21 mm (1-13), 51 mm (24-25), 42 mm (26-28), and 202 mm (39-40), as well as pipes with square cross sections 25.4x25.1 mm (19-23). In order to determine

USSR

UDC: 621.396.6.002

SHABROV, V. G., MALYAR, V. V., ALTUNIN, V. I.

"State and Prospects of Repair Production in the Sector"

Elektron. prom-st'. Nauch.-tekhn. sb. (The Electronics Industry. Scientific and Technical Collection), 1972, No 1, p 92 (from RZh-Radiotekhnika, No 8, Aug 72, Abstract No 8V357)

Translation: The paper briefly characterizes the state of repair production in the sector. The advantages of a centralized system of repair service to enterprises are considered. Resumé.

1/1

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USSR

UDC: 621.397

SHUMLYAYEV, V. S., MOROZOV, V. A., SUDRAVSKIY, D. D., and
SHABUNIN, A. I.

"Large-Screen Stereo Television"

Moscow, Tekhnika kino i televideniya, No 3, 1972, pp 65-66

Abstract: A description is given of experiments in stereoscopic television on a large screen conducted by the Television Department in the M. A. Bonch-Bruyevich Electrotechnical Institute of Communications in Leningrad. The experimenters used the transmitting part of a two-channel stereo television equipment, with two television light-valve projectors used for image reproduction. At a light flux of up to 2000 lumens, the brightness of the image is high enough for use of the polarization method of separation of image pairs. Specifications of the system, which conform to Government Standard GOST 7845-55, are given together with its block diagram. The authors conclude that this system may be used in various types of training situations, such as operation of aircraft, for lectures in the VUZ schools, and in applied science.

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USSR

UDC 51

BELOZEROV, V. V., NAUMOV, N. P., SHABUNIN, M. I.

"Problem of Mathematical Description of the Process of Executing an Operation"

V sb. Issled. operatsiy. Modeli, sistemy, resheniya. Vyp. 3 (Operations Research. Models, Systems, Decisions. Vyp. 3 -- collection of works), Moscow, 1972, pp 64-74 (from RZh-Kibernetika, No 9, Sep 73, Abstract No 9V516)

Translation: A study is made of an approach to the mathematical description of the process of executing an operation in which along with the ordinary factors (such as the operation execution time, the intensity of resource consumption, and so on) the results achieved during the processes executing the operation are considered in accordance with the stated goal. We are talking about describing such operations the initial information for which, as a rule, is of a hypothetical nature and can be obtained by expert evaluations. The process of executing the operation is described using a differential equation or system of equations the right-hand sides of which can be obtained from solving the problem of minimizing the quadratic form of a special type in the presence of certain restrictions. The proposed approach for practical utilization of it permits implementation on a computer.

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Physiology

USSR

UDC 612.815.816

MATYUSHKIN, D. P., and SHABUNOVA, I. A.

"Effect of Imidazole on the Nerve Impulse Transmitter and Neuromuscular Transmission of Excitation (as Related to the Hypothesis of the Existence of Chemical Feedback at the Synapse)"

Leningrad, Vestnik Leningradskogo Universiteta, Vol 2, No 9, May 72, pp 97-100

Abstract: Experiments with frog sciatic nerves treated in 9 mmole imidazole per liter for 45-60 min showed that imidazole decreased the nerve response potential (NRP) to 55.5%. Duration of the ascending phase of NRP increased by 44% due to imidazole. At the same time the neuromuscular transmission and the potentiation time decreased to 82.6 and 52.5%, respectively. The obtained results indicate that imidazole inhibits the function of sodium membrane channels and inactivates part of them. The effect of imidazole is positive with respect to the neurosecretory process and negative with respect to electrogenesis. If we assume that some imidazole-containing substance acts as a mediator of feedback at the synapse, then the dual effect of imidazole can be interpreted as being regulatory in the presynapse processes. It is also possible that we are dealing here with mechanisms of positive and negative feedback at the synapse, one of which constantly maintains the synapse function, and the other tries to limit it. The obtained results are inconclusive and further experiments are needed.

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UDC 612:018.577.49

KOLPAKOV, M. G., KOLAYEVA, S. G., and SHABUROVA, G. S., Institute of Physiology, Siberian Department, Academy of Sciences USSR, Novosibirsk

"Seasonal Rhythms in the Functioning of the Endocrine System in Hibernating Mammals"

Moscow, Uspekhi Fiziologicheskikh Nauk, Vol 3, No 1, 1972, pp 52-68

Abstract: The article reviews 72 publications (dating from 1926 to 1970) concerning seasonal fluctuations and interrelationships of endocrine glands in hibernating hedgehogs, hamsters, squirrels, gophers, jerboas, and other mammals. During the waking season, the endocrine system of these animals is organized in the same pattern as that of other mammals. During the hibernating season, the hypothalamus and the hypophysis lose some of their master control function, while the autonomy of other glands, especially the pancreas, parathyroids, and adrenal cortex, increases. Typically, the secretion of cortisone and insulin exceeds the output of the other hormones produced by the adrenal cortex and pancreas. The year is divided into three periods with several phases: 1) homeothermic period (Apr-Aug) with a) phase of explosive endocrine activity (Apr-May), b) phase of rapid decrease (Jun), and c) phase of stabilization (Jul-Aug); 2) transitory period (Sep-Oct); and 3) hibernation period (Oct-Mar)

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KOLPAKOV, M. G., et al., *Uspekhi Fiziologicheskikh Nauk*, Vol 3, No 1, 1972,
pp 52-68

with a) phase of initial sleep (Oct-Nov), b) phase of deep sleep (Dec-Jan),
and c) phase of preparation for arousal (Feb-Mar).

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USSR

UDC: 681.327

BURDOVSKIY, I. N., GRISHIN, M. P., KURBANOV, Sh. M., MARKELOV, V. P., SER-
GEYEV, V. V., SIDORENKO, V. R., TSEREVITINOV, S. S., SHABUROVA, L. M.,
Moscow

"Computer Processing of Optical Interference Patterns"

Novosibirsk, Avtometriya, No 4, Jul/Aug 71, pp 21-26

Abstract: The paper is a report of initial experiments in using a photo-
metric scanning system in conjunction with a general-purpose computer for
analyzing halftone images (optical interference patterns). Line-scanning
of the pattern was used for computer input through an analog-digital con-
verter with 64 levels of quantization. A flowchart of the processing pro-
gram is given. The results of computer processing on the Minsk-22 com-
puter are compared with manual analysis for plasma interference patterns.
Excellent agreement is observed with a time reduction of more than two
orders of magnitude for machine processing. The authors thank V. S.
Vaynshteyn and M. I. Pergament for taking part in the initial phase of
the work. Three figures, bibliography of five titles.

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USSR

SHACHNEV, V. I.

UDC 621.315.592.3:669.782

"Molecular Composition of Vapors in the Processes of Silicon Autoepitaxy"

Elektron. tekhnika. Nauchno-tekhn. sb. Materialy (Electronic Engineering. Scientific and Technical Collection. Materials), 1970, vyp. 5, pp 139-140 (from RZh-Metallurgiya, No 4, Apr 71, Abstract No 4G489)

Translation: The necessity of considering the molecular composition of the gas phase in the processes of Si autoepitaxy is demonstrated. A thermodynamic analysis of the composition of the vapors (B, Si, P, As, and Sb) in the temperature range of 800-1,250° and at partial pressures of the initial compounds of $2 \cdot 10^{-3}$ - $2 \cdot 10^{11}$ is presented. Under these conditions of epitaxial growth, the Si, B, and Sb vapors are practically monoatomic; when alloying P or As to a level of $\sim 10^{17}$ and higher in the gas phase it is necessary to consider diatomic molecules of these elements. The results obtained can be used for physical-chemical calculations of various processes of treating Si-epitaxy, diffusion, and growth of alloyed ingots.

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UDC 621.315.592.3:669.782-416

SHACHNEV, V. I., USKOV, A. G., SHUTIKOV, V. G.

"Thermodynamics of the process of Growing Autoepitaxial Layers of Silicon Alloyed with Phosphorus in the Chloride Process"

Elektron. tekhnika. Nauchno-tekhn. sb. Materialy (Electronic Engineering. Scientific and Technical Collection. Materials), 1970, vyp. 5, pp 137-138 (from RZh-Metallurgiya, No 4, Apr 71, Abstract No 4G487)

Translation: A thermodynamic analysis of the $\text{PCl}_3(\text{gas})$ - $\text{SiCl}_4(\text{gas})$ - $\text{H}_2(\text{gas})$ system is performed for standard conditions of the process of growing auto-epitaxial layers of Si with n-type conductivity (the ratio of the reagents in the initial mixture is $\text{SiCl}_4(\text{gas}) : \text{H}_2(\text{gas}) = 1 : 500$ and $\text{PCl}_3(\text{gas}) : \text{SiCl}_4(\text{gas}) = 10^3 - 10^8$. The yields of $\text{Si}(\mu_{\text{Si}})$ and (μ_{P}) in the 800-1,600° K range are calculated by joint solution of the system of equations relating the calculated equilibrium constants of the reaction of reduction of $\text{SiCl}_4(\text{gas})$ and $\text{PCl}_3(\text{gas})$ by hydrogen. For the indicated composition of the initial gas mixture, μ_{Si} and μ_{P} reach one at 1,200°K and 800°K.

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SHACHNEV, V. I., USKOV, A. G.

UDC 621.315.592.3:669.
782-416

"Thermodynamic Analysis of the Process of Obtaining Autoepitaxial Layers of Silicon with Gas Alloying"

Elektron. tekhnika. Nauchno-tekhn. sb. Materialy (Electronic Engineering. Scientific and Technical Collection. Materials), 1970, vyp. 5, pp 138-139 (from RZh-Metallurgiya, No 4, Apr 71, Abstract No 4G490)

Translation: A thermodynamic analysis of systems including hydrogen, Si tetrachloride, and the hydride of the alloying element (diborane, phosphine, or arsine) is performed. The magnitudes and nature of variation of the relative transition coefficients of the alloying elements as a result of complete decomposition of the hydrides and a significant excess of HCl fully coincide with the analogous characteristics of the transition coefficient in the case of alloying these elements with halides. For phosphine and arsine the relative transition coefficients of P and As at 1,200° and higher are equal to one, and they do not depend on the composition of the initial mixture. The relative transition coefficient B increases significantly with an increase in the diborane content in the initial mixture, approaching one. Gas alloying

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SCHACHEV, V. I., et al., Elektron. tekhnika. Nauchno-tekhn. sb. Materialy,
1970, vyp. 5, pp 138-139

with hydrides insures better homogeneity of the specific resistance by comparison with alloying with halides.

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UDC 621.315.592:669.782-416

SHACHNEV, V. I., AFANAS'YEVICH, V. F., USKOV, A. G., SHUTIKOV, V. P.

"Thermodynamics of the Process of Obtaining Autoepitaxial Layers of Silicon by Pyrolysis of Silane"

Elektron. tekhnika. Nauchno-tekhn. sb. Materialy (Electronic Engineering. Scientific and Technical Collection. Materials), 1970, vyp. 5, p 139 (from RZh-Metallurgiya, No 4, Apr 71, Abstract No 4G486)

Translation: The equilibrium constants of the decomposition reactions of monosilane and hydrides of the alloying elements of the third and fifth groups (diborane, phosphine, and arsine) are calculated. For the standard conditions of the process of epitaxial growth of Si (the ratio in the initial gas mixture $\text{SiH}(\text{gas}) : \text{H}_2(\text{gas}) = 1 : 10^3$ and $\text{EH}_3(\text{B}_2\text{H}_6(\text{gas}) : \text{SiH}_4(\text{gas}) = 10^3 - 10^8)$, the relative transition coefficients of the alloying admixtures are calculated ($\eta_e = \mu_e / \mu_{\text{Si}}$, where μ_e and μ_{Si} are the yields of the alloying element and Si) in the temperature range of 800-1,600° K. For all the investigated alloying elements (B, P, and As) the relative transition coefficient is constant and equal to one under the indicated conditions.

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